8.3 8.3.1

17. Write a note on digestion of food in human stomach.

OR Write the functions and draw structure of stomach.

OR Describe digestion and absorption in small intestine.

OR Describe the role of small intestive in digestion.

OR Write about main changes which occurs in digestion of food in stomach.

OR Describe the structure fo stomach with labelled diagram.

OR Write role of small intestine in complete digestion and absorption of food.

18. Describe the role of oral cavity in digestion of food.

OR Write different functions of oral cavity.

OR How Oral Cavity plays a role in selection, grinding and partial digestion of food?

8.3.2

19. Write down detailed note on role of Liver in human.

OR Write the functions of liver.

OR Write down four functions of Liver.

OR Describe the other function of liver beside digestion

OR What do you know about Liver? Write down any four functions of Liver.

8.4

20. Write a note on the causes of diarrhoea and constipation.

OR Write a detail of three human diseases in elementary canal.

OR Briefly explain two diases of gut.

Unit-9 Transport

(MCQs)

9.1 Transport In Plants

1- Regulate the, openning and closing of stoma.

(A) Calcium (B) Phosphoruos
(C) Sulphur **(D) Potassium**

2- The stomata open when guard cells:

(A) Become Flaccid
(B) Gain chloride ions
(C) Become turgid
(D) Loose water

9.1.1 Uptake of Water and Ions

3- Tissue responsible for the transport of water and dissolved substance from roots to aerial parts in plants is:

(A) Phloem **(B) Xylem**
(C) Cambi1um (D) Ground

4- The roots and root hairs absorb water from soil:

(A) Osmosis **(B) Diffusion**
(C) Phloem (D) Air

5- Severe deficiency of water in plants is called as:

(A) Dessication
(B) Respiration
(C) Transpiration
(D) Nutrition

9.1.2 Transpiration

6- Water removed due to transpiration:

(A) 80% (B) 30%
(C) 90% (D) 40%

7- Transpiration rate depend upon:

(A) Leaf surface area
(B) Water content
(C) Temperature
(D) All of these

8- The force which carries water upward through Xylem in plant is called:

OR Force that is responsible for the conduction of water and salts from soil by the roots is called:

(A) Osmosis

(B) Turgor
(C) Transpiration
(D) Transpiration Pull

9- Transpiration takes place through.
(A) Stomata (B) Cuticle
(C) Lenticels (D) All of these

10- The temperature range which cause stop the transpiration:
OR Temperature that causes closure of stomata:
(A) 40° – 45°C (B) 10° – 20°C
(C) 20° – 40°C (D) 20° – 45°C

11- Rate of respiraton decrease due to the increase in ________:
(A) Temperature
(B) Air Movement
(C) Air Humidity
(D) Leaf Surface Area

12- Guard cells belong to:
OR Guard cells are part of:
(A) Pericyle
(B) Stomata
(C) Cortex
(D) Endodermis

13- The transpiration is negulated by:
(A) Mesophyll Cells
(B) Guard cells
(C) Xylem Cells
(D) Pholem Cells

14- Most of the transpiration occurs through:
(A) Stomata (B) Mesophyll
(C) Cuticle (D) Lenticels

15- Transpiration rate does not depend upon:
(A) Leaf diameter
(B) Temperature
(C) Air movement
(D) CO_2

9.1.3 Transport of Water

16- Which part of plant is responsible for transport of water?
OR Responsible for transporting of food in whole body of plant is:
(A) Xylem (B) Pholem
(C) Root (D) Leaf

9.1.4 Transport of Food

17- In most plants food is transported in the form of:
(A) Proteins (B) Starch
(C) Sucrose (D) Glucose

18- In Plant, Transport of Food is occur by:
(A) Wind
(B) Temperature
(C) Pressure
(D) Pressure Flow Mechanism

9.2 Transport In Human

19- In a tissue capillaries join to form small veins:
(A) Lumen (B) Venules
(C) Capillaries (D) Arterioles

20- Valves of prevent the backward flow of blood are found in:
(A) Arteries (B) Veins
(C) Capillaries (D) All of these

9.2.1 Blood

21- A cubic millimeter of Blood contains number of platelets:
(A) 240,000 (B) 250,000
(C) 260,000 (D) 270,000

22- Number of White Blood Cells in One Cubic Millimeter of Blood:
(A) 4000-5000
(B) 5000-7000
(C) 6000-7000
(D) 7000-8000

23- A cubic millimeter of blood contains Red Blood cells in males?
(A) 5 to 5.5 millions
(B) 4 to 4.5 millions
(C) 6 to 6.5 millions
(D) 2 to 3 millions

24- The volume of blood in average adult body is about:
(A) 6 Litre (B) 5 Litre
(C) 4 Litre (D) 3 Litre

25- Average Life span of red blood cells is:
(A) 120-days (B) 150-days
(C) 12-days (D) 130-days

26- Average life duration of a platelet is:
(A) 7 to 8 days
(B) 6 to 7 days
(C) 7 to 9 days
(D) 8 to 9 days

27- What is normal pH of Blood?
(A) 6.8 (B) 7.0
(C) 7.2 (D) 7.4

28- Which cells of blood responsible for clotting?

(A) Platelets (B) Erythrocytes
(C) Neutrophils (D) Basophils

29- **Which protein is responsible for blood clotting?**
(A) Albumin (B) Fibronogen
(C) Globulin (D) Hemoglobin

30- **Who manfactures blood clotting protein Fibrinogen:**
(A) Heart (B) Liver
(C) Stomach (D) Brain

31- **The function of Platelets is:**
(A) Blood clotting
(B) Engulfing bacteria
(C) Produce antibodies
(D) To produce antigens

32- **The white blood cells that produce antibodies called:**
(A) Basophils
(B) Eusinophils
(C) Monocytes
(D) Limphocytes

33- **Which of the following is a type of Leukocytes.**
(A) Lympho-cyte
(B) Eosinophil
(C) Monocyte
(D) Above all

34- **Which cell play role in body's defence.**
(A) Erythrocytes
(B) Thrombocytes
(C) Basophils
(D) Leukocytes

35- **In dengue fever, which cells are shorten?**
(A) Red blood cells
(B) Platelets
(C) White blood cells
(D) None

36- **During embryolic development red blood cells are produced in:**
(A) Sternum (B) Spleen
(C) Ribs (D) Vertebrae

37- **The size of human red blood cell is:**
(A) 2μm (B) 4μm
(C) 6μm (D) 8μm

38- **Which one of these is inheretid disease:**
(A) Malaria
(B) Typhoid
(C) Leukaemia
(D) Thalassaemia

39- **When blood cells are separated from blood what did remain?**
(A) Plasma (B) Serum
(C) Protein (D) Water

40- **How much water makes the part of plasma?**
(A) 90-92% (B) 90-91%
(C) 90-80% (D) 90-70%

41- **Salts makeup plasma by weight:**
(A) 0.6% (B) 0.8%
(C) 0.7% (D) 0.9%

42- **Plasma protein which keeps balance of water in blood is:**
OR **The protein which maintains the water balance of blood is:**
(A) Fibrinogen
(B) Albumin
(C) Antibodies
(D) Fibrin

43- **Who discovered ABO Blood group system?**
(A) Karl Landsteiner
(B) Lamark
(C) Rudolf Virchow
(D) Melvin Calvin

44- **"AB" blood group individual are called:**
(A) Sickle cells
(B) Universal donors
(C) Universal recipients
(D) Necrosis

45- **Which blood group contains antigen A.**
(A) A (B) B
(C) AB (D) O

46- **The blood group which is universal donor:**
OR **The individuals having ____ blood group are called universal donors.**
(A) AB (B) O
(C) A (D) B

47- **The Universal Recipient has Antigen:**
(A) A (B) B
(C) Rh (D) A & B

48- **Blood group B consists of:**
(A) Antigen A & Antibodis B
(B) Antigen AB & Antibodies None
(C) Antigen None & Antiboides AB
(D) Antigen B and Antibodies A

49- **A person having none of the antigen A and B has blood group:**

(A) "B" (B) "AB"
(C) "O" (D) "A"

50- **Blood group B contains, Anti gene _______ and Anti bodies__________:**
(A) Anti gene A and Anti gene B
(B) Anti gene AB with No Anti bodies
(C) No Anti gene with AB Anti bodies
(D) Anti gene B and Anti bodies A

51- **A liter of Ethanol weights:**
(A) 1000g (B) 100g
(C) 789g (D) 780g

9.2.2 Human Heart

52- **The volume of Blood in adult person is about:**
(A) 4 litre (B) 5 litre
(C) 6 litre (D) 7 litre

53- **Human Heart is enclosed in Double Membranous sac called:**
(A) Plewra (B) Pericardium
(C) Peritonium (D) Pericarp

54- **In normal adult human, the weight of heat is:**
(A) 200-250g (B) 150-200g
(C) 250-350g (D) 100-200g

55- **A healthy woman's heart beat rate per minute is:**
(A) 70 (B) 72
(C) 75 (D) 80

56- **In one heart beat, diastole remains about seconds:**
(A) 0.6 (B) 0.8
(C) 0.4 (D) 0.7

57- **By which instruments the sound of "Lub dub" can be heard?**
(A) Stethoscope
(B) Telescope
(C) Microscope
(D) Sound box

58- **Pumping action of heart was discovered by:**
OR **Scientist who discovered pumping action of heart.**
(A) Kelvin
(B) Emii Fischer
(C) William harvey
(D) Robert Hooke

59- **The largest and strongest chamber of heart is:**
OR **Which chamber has the thickest wall in human heart?**
(A) Right atrium
(B) Left atrium
(C) Right ventricle
(D) Left Ventricle

9.2.3 Blood Vessels

60- **Which of the tissue layer is found in all blood vessels?**
(A) Endothelium
(B) Nervous tissues
(C) Skeletal muscles
(D) Connective tissues

61- **The blood vessels that carry blood away from heart.**
(A) arteries (B) veins
(C) capallaries (D) lymph

62- **These are smallest blood vessels.**
OR **Exchange of materials between blood and surrounding tissues occurs:**
(A) Arteries
(B) Veins
(C) Capillaries
(D) All these

63- **The blood vessels which carry blood back to the heart are called:**
(A) Arteries (B) Capillaries
(C) Veins (D) Arterioles

64- **Which of the following Blood Vessel carry Deoxygenated Blood:**
(A) Aorta (B) Renal Artery
(C) Pulmonary Vein
(D) Pulmonary Artery

65- **The Largest Artery is called:**
(A) Aorta
(B) Inter Costal Artery
(C) Hepatic Artery
(D) Renal Artery

66- **An artery that supplies blood to liver:**
(A) Renal artery
(B) Femoral artery
(C) Hepatic artery
(D) Coronary artery

9.3 Cardiovascular Disorders

9.3.2 Myocardial Infarcion

67- **World heart day is celebrated on:**
OR **World heart day is celebrated every year on:**
(A) 30 Dec (B) 28 Sep
(C) 28 May (D) 23 Mar

68- **The death of heart tissues is called:**
(A) Atherosclerosis
(B) Artericsclerosis
(C) Myocardial Inarction
(D) Thalassaemia

69- **Myocardium means:**
(A) Tissue death
(B) The heart Muscles
(C) Embolus
(D) Thrombus

70- **Cancer of blood is:**
OR **Exess increase of Abnormal white blood cells is caused of:**
(A) Thalassaemia
(B) leukaemia
(C) Pneumonia
(D) Arthritis

71- **Angina pectoris is what type of pain?**
(A) Kidney pain
(B) Lungs pain
(C) Gastric pain
(D) Chest pain

72- **Angina pectoris means :**
(A) Heart pain severly
(B) Chest comfortness
(C) Chest pain (D) Leg pain

(Short Questions)

9.1 Transport In Plants

1. **Describe function of Xylem and Phloem.**
OR **Write down function of phloem in plants.**
OR **Define Xlem and Phloem tissue.**

Ans. **Xylem Tissue:** Xylem tissue is responsible for the transport of water and dissolved substances from roots to the aerial parts.
Phloem Tissue: Phloem tissue is responsible for the conduction of dissolved organic matter (food) between different parts of the plant body.

2. **Write the role of vescular systems in plants.**

Ans. All land plants (except for mosses and liverworts) have developed complex vascular tissues consist on xylem and phloem vessels. This system helps to move water and food through out a plant's body.

3. **Write down name of vessels found in vascular system.**

Ans. The names of vessels found in vascular system are given below:
i) Xylem vessels
ii) Phloem vessels

9.1.1 Uptake of Water and Ions

4. **Write the function of root in plant.**

Ans.
i) Roots absorb water and salts from the soil.
ii) They provide conducting tissues for distributing Salts and water to the tissues of the stem.

5. **Write function of roots hairs in the roots of plants.**

Ans. Root hairs are actually the extensions of epidermal cells. Root hairs provide large surface area for absorption. They grow out into the spaces between soil particles where they are in direct contact with water.

9.1.2 Transpiration

6. **What is meant by transpiration? Describe mode of transpiration.**

Ans. **Transpiration:** The loss of water from plant surface through evaporation is called transpiration.
Modes of transpiration: The loss of water by transpiration in plants may occur through;
Transpiration takes place through different modes.
i) stomata in leaves
ii) cuticle on leaf epidermis
iii) lenticels in the stems of some plants.

7. **Why transpiration is neccessary for plants?**

Ans. Transpiration is called a "necessary evil" which means that, it is potentially harmfull process but is unavoidable as well as, necessary too. Because it creates a pulling force called Transpirational Pull, which is

responsible for the conduction of water and salts from roots to the aerial parts of plant body. When water transpires from the surfaces of plants, it leaves a cooling effect on plant. Moreover, the wet surfaces of leaf's cells allow gaseous exchange.

8. Why Transpiration is harmful process for plants?

OR Tranpiratoin could be harmful process. Why?

Ans. Transpiration is called a necessary evil, It means that transpiration is a potentially harmful process but is unavoidable too.Transpiration may be a harfmul process in the sense that during the conditions drought, loss of water from plant results in serious desiccation, wilting and often death.

9. Give harmful and beneficial aspects of transpiration.

Ans. Harmful aspects: Transpiration is a potentially harmful process but is unavoidable too. It may be harmful process in the sense that it requires surfaces from which evaporation can occur and during the conditions of drought, loss of water from the plant result wilting, serious desiccation and often death of the plant.

Beneficial aspects:

i) Transpiration creates a pulling force called transpirational pull which principally resposible for conducting of water and salts from roots to the aerial parts of the plant body.

ii) It provides cooling to plants help on transport of food in different parts.

10. What is meant by desication?

Ans. If water loses from plants body it results as serious desiccation welting and often death.

11. Define Turgor.

Ans. The pressure exerted by the water on the wall of the plants cell is called turgor pressure.

12. Where Lenticels are found and what is their function?

Ans. Lenticels: Lenticels are pores present in stem of some plants.

Function of Lenticels: Lenticels are responsible for evaporation of water or transpiration.

13. What do you mean by stomatal transpiration?

OR Define stomatal transpiration.

Ans. Most of the transpiration takes place through stomata and it is called stomatal transpiration.

14. Describe the function of stomata.

Ans. Stomata are the microscopic pores in the epidermis of leaves. They are used for the exchange of the gases and loss of water through transpiration.

15. Which factors are responsible for opening or closing of stomata?

Ans. Opening and closing of stomata depends upon two factors:

i) Concentration of solutes(glucose) in the gaurd cells responsible for opening and closing of stomata.

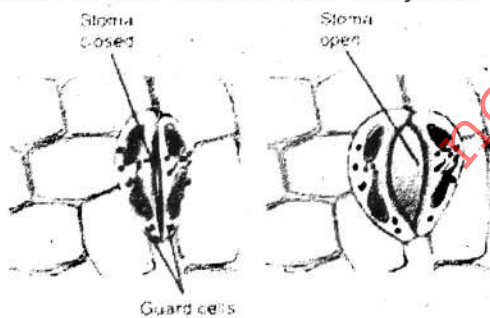
ii) Recent research has revealed this prosess has light cause the potassium ions to opening and closing of stomata.

16. How transpiration is controlled by opening and closing of stomata? Explain it.

Ans. Most plants keep their stomata open during the day and close them at night Because transpiration never take place at that time. In day time stomata are responsible for regulating transpiration via the action of guard cells. A stomata has two guard cells, those are attached to each other at their ends. when guard cells get water, they become turgid and their shave are like two beans. This make

stomata opens. Similarly when guard cells loose water due to transpiration they become flaccid, their inner sides touch each other and stomata get closed. This show that transpiration is controlled by opening and closing of stomata.

17. How guard cells controlled the opening and closing of stomata? Explain it.

Ans. Solute concentration in guard cells is responsible for opening and closing of stomata recent research has revealed this process as light cause the movement of potassium ions from epidermal cells into guard cells. Water follows these ions and enters guard cells. Thus their turgidity increase and stoma opens. At the end of the day, potassium ions flow back from guard cells to epidermal cells and the concentration of glucose also falls. Due to it, water moves to epidermal cells and guard cells loose turgor. It causes the closure of stomata.

18. Write down the four factors affecting the rate of transpiration.

Ans. i) Temperature ii) Air humidity
iii) Air movement
iv) leaf surface area

19. What the effect of Air humidity on the rate of Transpiration?

Ans. When air is dry, water vapours diffuse more quickly from the surface of mesophyll cells into leaf air spaces and then from air spaces to outside. This increases the rate of transpiration. In humid air, the rate of the diffusion of water vapours is reduced and the rate of transpiration is low.

20. What is the effect of temperature on the rate of Transpiration?

Ans. Higher temperature reduces the humidity of surrounding air and also increases the kinetic energy of water molecules. In this way it increases the rate of transpiration. The rate of transpiration doubles with every rise of 10°C in temperature. But, very high temperatures i.e. 40-45°C cause closure of stomata, so transpiration stops and plant does not loose the much needed water.

21. How transpiration rate affects when air movement changes?

OR How does wind (air in motion) affect the rate of transpiration?

OR What is meant by wind? Write its effect on transpiration.

Ans: Air in motion is known as wind. Wind carries away the evaporated water from leaves and it causes an increase in the rate of evaporation from the surfaces of mesophyll. When air is still, the rate of transpiration is reduced.

9.1.3 Transport of Water

22. What is transpiration pull? Give reasons for its creation.

OR Define transpiration pull.

OR Write the reasons for transpiration pull.

Ans. Transpirational pull: Transpirational pull is the force which carries water and soluble salts upward through the xylem adhesion.

Reasons of transpirational pull:

i) Water is held in a tube called xylem that has small diameter.

ii) Water molecules adhere to the walls of xylem tube.

Water molecules cohere to each other (cohesion). These attractions make an overall tension among water molecules and form 'columns' of

water. The columns of water move from root to shoot and the water content of the soil enters in these column.

23. Explain two factors which can cause transpirational pull.

Ans. Reasons of transpirational pull:

i) Water is held in a tube called xylem that has small diameter.

ii) Water molecules adhere to the walls of xylem tube (Adhesion)

iii) Water molecules cohere to each other (cohesion). These attractions make an overall tension among water molecules and form 'columns' of water. The columns of water move from root to shoot and the water content of the soil enters in these column.

24. Define cohesion - Tension theory.

Ans. According to cohesion-tension theory, the force which carries water upward through the xylem is transpiration pull. Transpiration creates a pressure difference that pulls water and salt up from roots.

9.1.4 Transport of Food

25. What is the role of sink in transport of food?

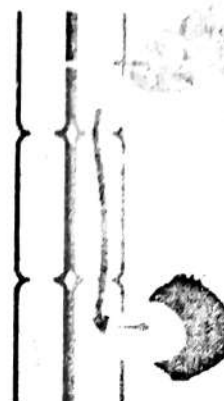
OR. What is meant by source in Plant? Explain with an example.

OR. What is the difference between source and sink?

OR What is meant by sink?

Ans. Source: Sources include the exporting organs, typically a mature leaf or storage organ.

Sinks: Sinks are the areas of active metabolism or storage.

Examples: Roots, tubers developing fruits and leaves and growing regions.

26. Define pressure flow Mechanism.

Ans. According to pressure flow mechanism the food is moved from source to sink due to low pressure at the walls of sink.

9.2 Transport In Human

27. Write the name of two transport systems in human beings?

Ans. Human transport system consists of two complex systems.

i) Blood circulatory system

ii) Lymphatic system

The two systems are well coordinated and associated with each other.

28. What is meant by closed circulatory system? In which animals is present?

Ans. Humans have a closed blood circulatory system (meaning that blood never leaves the network of arteries, veins and capillaries).

29. Write the names of two famous scientists who revealed much knowledge of blood circulatory system.

Ans. Two important scientists who revealed much knowledge of blood circulatory system were Ibn-e-Nafees and William Harvey.

30. What are the main components of human blood circulatory system?

Ans. Components of Blood Circulatory System in Man:

i. Blood ii. Heart

iii. Blood vessels

9.2.1 Blood

31. What do you mean by blood? Write composition of a healthy man.

OR What is blood? Write down the total volume of blood in adult human.

OR What is blood? Write the name of its parts.

Ans. Bloodis a specialized body fluid, considered a specialized form of connective tissue.Blood is composed of a liquid called blood plasma and blood cells. The weight of blood in our body is about 1/12 of our body. The average adult has about 5 liters of blood. In a healthy person plasma constitutes about 55% by volume of blood, and cells or cel-like bodies are about 45% by volume of the blood.

32. What is meant by blood plasma?

Ans. Plasma is primarily water in which proteins, salts, metabolites and wastes are dissolved. Water constitutes about 90-92% of plasma and 8-10% are dissolved substance. Salts make up 0.9% of plasma, by weight.

33. Write the names of any two plasma proteins.

Ans. Plasma Proteins:

i. Albumins ii. Fibrinogen

iii. Antibodies

34. What is Fibrinogen? Write down its function.

Ans. A protein in the blood plasma that is essential for the coagulation of blood is called fibrinogen.

35. Define serum.

Ans. Blood plasma without fibrogen protein is called serum.

36. How is plasma separated from blood?

Ans. Blood is taken from any artery and an anticoagulant chemical that inhibits blood clotting is mixed in it. After about 5 minutes, palsma separates from blood cells, which settle down.

37. What are Red Blood Cells. Write down their number in human beings.

Ans. These are the most numerous of blood cells. A cubic millimeter of blood contains 5 to 5.5 million of RBCs in males, and 4 to 4.5 million in females.

38. Write the structure of red blood cells.

Ans: Structure of Red blood cells:

(i) RBC's are biconcave and have an elastic cell membrane.

(ii) They do not have nucleus to make room for more oxygen.

(iii) They contain haemoglobin.

39. Describe role of Fibrinogen and Albumin in Blood.

Ans: Fibrinogen is blood clotting protein and Albumin helps in maintaining water balance in blood.

White Blood Cells

40. Describe two functions of white blood cells in Human blood.

OR Describe function of Leukocytes.

OR How much white blood cells are present in the body and what are their functions?

OR How much white blood cells are present in the body and what are their functions?

OR Describe two functions of white blood cells in human body.

Ans. Functions of white blood cells:

White blood cells are important part of immune system and kill germs.

i) Type of white blood cell monocytes produce macrophages which engulf germs.

ii) Type of WBC is Lymphocytes, B and T lymphocytes produce antibodies and kill germs.

41. Which are two major types of white blood cells?

OR What are white blood cells? Name its two main types.

Ans. Two major types of white blood cells:

i) Granulocytes ii) Agranulocytes

42. What is meant by Granulocytes?

Ans. One type of white blood cells are Granulocytes. Granulocytes have

granular cytoplasm.

43. Write the function of Neutrophils and Basophils.

Ans. i) Neutriphils splits particles by phagocytosis.

ii) Basophils prevent blood clotting.

44. You see the pus in the infection of skin. How it formed?

OR How PUS is formed?

OR What do you mean by pus? How is it formed?

Ans. During killing germs nacrophages and nutrophills also die. These dead cells accunulatc and make the white substance called pus, seen at infection sites.

Platelets

45. Write the functions of white blood cells and platelets.

Ans. Function of white blood cells: WBC's function as the main agents in body's defence system. destroy small particles, engulfing of small particles, to produce antibodies and the release of anticoagulants.

Function of platelets: Platelets helps in blood cloting and to prevent the loss of blood.

46. Patients bleed from the nose, gums and under the skin in dengue fever. Why?

OR Why dengue fever is too dangerous for human?

OR Write two damages of dengue fever.

OR Which blood cells decrease in numbers during Dengue Fever?

Ans. In dengue fever, there is a sharp decrease in the number of platelets in blood. Platelets are responsible for blood clotting. Because of this, patients bleed from the nose, gums and under the skin.

The causal organism of Dengue Fever is a mosquito called *Aedes Aegypti.*

47. Who is the causal organism of Dengue Fever.

OR How does dengue spread?

OR Write the name of mosquito who spreads dengue.

Ans. The causal organism of Dengue Fever is a mosquito called *Aedes Egypti.*

48. Write the symptoms of Dengue Fever.

Ans. Symptoms of Dengue Fever:

i) High Fever
ii) Severe Headache
iii) Pain behind Eyes
iv) Pain in muscles and joints
v) Spots on the skin
vi) Bleeding due to deficiency of platelets

49. Write preventive measures for dengue Fever.

OR What are preventive measure to control Dengue fever.

Ans. As there is still no vaccinine or treatment for dengue fever, so the only way to control the transmission of virus is to control the contraction of Aedes mosquitoes. Usually Aedes grows at following places.

i) water storing wares
ii) Waste plastic wares
iii) used tyres
iv) Other things in which rain water can be stored.

We can control mosquitoes by disposing waste materials properly and improving water storing tools.

50. Write down the physical appearance or characteristics of " Dengue Fever's mosquito".

Ans: Physical characteristics of "Dengue Fever's mosquito":

(i) *Aedes aegypti* is medium-sized black-colored mosquito.

(ii) It have white stripes on its legs.

51. Name the mosquitoe which spreads dengue and what happens to blood platelets during Dengue Fever.

Ans: The causal organism of Dengue Fever is a mosquito called Aedes egypti. In dengue fever, there is a sharp decrease in the number of

platelets in blood. Platelets are responsible for blood clotting. Because of this, patients bleed from the nose, gums and under the skin.

Blood Disorders

52. What is Leukemia?
OR Write two symptoms of Leukemia.
OR Describe the reason of production of defective Leukocytes.

Ans. Leukemia is the production of great number of immature and abnormal white blood cells. This is caused by a cancerous mutation change in gene in bone marrow or lymph tissue cells. The mutation results in uncontrolled production of defective white blood cells (leukocytes).

53. What is Thalassaemia and is its treatment?
OR Explain Thalassemia?

Ans. It is a genetic problem due to mutations in the gene of haemoglobin. The mutations results in the production of defective haemoglobin and the patient cannot transport oxygen properly. The blood of these patients is to be replaced regularly, with normal blood. It can be cured by bone marrow transplant but it does not give 100% cure rate.

Blood Group Systems

54. What is meant by Blood Group System?

Ans. Blood group systems is a classification of blood based on the presence or absence of antigens on the surface of red blood cells.

55. Define Antigen.

Ans. An antigen is a molecule that can stimulate an immune response like antibody production etc.

56. What is Rh blood group system and who discovered it?

Ans. In this system, there are two blood groups i.e. Rh-positive and Rh-negative, which are distinct from each other on the basis of antigens called Rh factors present on the surface of Red Blood Cells (RBCs). In 1930's Karl Landsteiner discovered the Rh blood group system.

57. Which persons are Universal Donors and Universal Recipients?
OR Differentiate between universal donar and universal recipient.

Ans. **Universal Donors:** O blood group individuals are called universal donors because they can donate blood to the recipients of any other blood group.

Universal Recipients: AB blood group individuals are called universal recipients, because they can receive transfusions from the donors of any other blood group.

58. Why blood group "O" is called universal donors?

Ans. Blood group "O" is called universal donor as it does not contain any antigen. It can be given to A, B, AB and O as well.

59. Why AB blood group individuals are called universal recipients?

Ans. AB blood group individuals are called universal recipient as it contains both antigen A & B, therefore antibodies against A & B both are absent. That's why patient with B blood group can receive blood from any one.

60. What is meant by atherosclerosis?

Ans. Atherosclerosis is commonly called as Narrowing of arteries. It is a chronic disease in which fatty material, cholesterol or Fibrin deposit on arteries. When this condition becomes severe, it becomes difficult to open and contract arteries further to flow the blood. Deposition of cholesterol is the major cause of Atherosclerosis.

61. When and who discovered ABO blood group system?

Ans: ABO blood group system was discovered by an austrian scientist Karl Landsteiner in 1900.

9.2.2 Human Heart

62. What is the mass and size of heart in normal adults?

Ans. In normal adults, the mass of heart is 250-350 g and the size is equal to a clenched fist.

63. Write the names of different chambers of human heart.

Ans. Introduction:

Heart is a muscular organ responsible for pumping blood through blood vessels by repeated contractions. The bulk of the walls of heart chambers is made of cardiac muscles.

Names of chambers:

Human's heart has four chambers and their names are given below.

i) Right atrium ii) Left atrium
iii) Right ventricle iv) Left ventricle

64. Heart is usually felt to be on left side. Why?

OR Write about the location of heart in a human body.

Ans. The heart is usually felt to be on the left side because the left chamber of the heart i.e. (left ventricle) is stronger (It pumps blood to all body parts).

65. What is the function of pericardial fluid and where is it found?

OR Shortly describe funtion of pericardial fluid.

OR What is the role of pericardial fluid?

Ans. Heart is enclosed in a sac known as pericardium. There is a fluid, known as pericardial fluid, between pericardium and heart walls. It reduces friction between pericardium and heart, during heart contractions.

66. Define Heart beat.

OR Define the terms Cardiac Cycle and Heart beat?

OR. What is meant by Cardiac cycle?

OR What do you mean by Cardiac cycle and heart beat?

OR What is heart beat?

Ans. The relaxation of heart chambers fills them with blood and contraction of chambers propels blood out of them. The alternating relaxations and contractions make up the cardiac cycle and one complete cardiac cycle makes one heartbeat.

67. What is lub dub?

OR How the sound of lubb dubb is produced during heart beat?

Ans. When ventricles contract, tricuspid and bicuspid valves close and "lubb" sound is produced. Similarly when ventricles relax, the semi lunar valves close and "dubb" sound is produced."Lubb-dubb" can be heard with the help of a stethoscope.

68. What is pulse? How it can be felt.

OR What is meant by Pulse.

Ans. Heart rate can be measured by feeling the pulse. Pulse is the rhythmic expansion and contraction of an artery as blood forced through it by the regular contraction of heart.

A Pulse felt at areas where artery is close to skin for example at wrist, neck, groin or top of foot.

69. What is the relation between Heart beat and pulse rats?

Ans.

i) Heart beat rate can be measured in times of feeling of puls. Heart beat rate and pulse rate in a healthy person is 70 per min in case of rest and routine activities.

ii) Heart beat rate and pulse rate is variable with body activity and stress condition.

70. Why human heart is called double pump?

OR How does human heart work as a

double pump?

Ans. Human heart works as a double pump. It receives deoxygenated (with less oxygen) blood from body and pumps it to lungs. At the same time it receives oxygenated (with more oxygen) blood from lungs and pumps it to all body.

71. Differentiate between Bicuspid and Tricuspid valve.

Ans. Bicuspid Valve: Valve with two flaps, present between the opening of left atrium and left ventricle, is called Bicuspid Valve. It prevents blood from back flow.

Tricuspid Valve: Valve present between the right atrium and right ventricle, is called Tricuspid Valve.

72. Write the definition of Systole and Diastole.

OR Differentiate between Cardiac diastole & Ventricular Systole:

Figure:One cardiac cycle

Ans. Systole: After the filling of atria. Both atria contract and pump blood towards ventricles. This is called systole.

Diastole: Atria and ventricles relax and blood is filled in atria this period is called cardiac diastole.

73. Define pulmonary circulation and systemic circulation.

OR What is systemic circulation?

Ans. Pulmonary circulation: The pathway on which deoxygenated blood is carried from the heart to the lungs and in return oxygenated blood is carried from the lungs to the heart is called pulmonary circulation or circuit.

Systemic circulation: The pathway on which oxygenated blood is carried from heart to the body tissues and in return deoxygenated blood is carried from the body tissues to the heart is called systemic circulation or circuit.

74. What is meant by Pulmonary circulation?

OR Explain pulmonary circulation.

OR Describe the pulmonary circulation or circuit.

Ans. The pathway on which deoxygenated blood is carried from heart to lungs and in return oxygenated blood is carried from lungs to heart is called pulmonary circulation.

9.2.3 Blood Vessels

75. Define Capillaries.

OR Describe role of capillaries in human blood circulatory system.

Ans. Capillaries are the smallest blood vessels present in tissues. These are formed by the division of arterioles. The exchange of materials between blood and tissues fluid is carried out through capillaries.

76. Differentiable between arteries and veins.

OR Write any two differences between arteries and veins.
OR What is the function of veins?
OR What are Arteries?

Ans. **Arteries:** Arteries are blood vessels that carry blood away from heart. Valves are not present in the walls of arteries.

Veins: Veins A vein is a blood vessel that carries blood toward heart. Valves are present in the walls of veins.

77. Differentiate between Arteries and Capillaries.

Ans. **Arteries:** Arteries are blood vessels that carry blood away from heart. Valves are not present in the walls of arteries.

Capillaries: Capillaries are responsible for exchange of materials between blood and tissues. Walls of cappilaries are not made up of muscles.

78. Write two achievements of "William Harvey"?

Ans. Many scientists worked for discovering the facts about the circulation of blood in human body. Two important scientists who revealed much knowledge of blood circulatory system, were "Ibn-e-Nafees" and "William Harvey". The two achievements of William Harvey are given below

i) He discovered pumping action of heart.
ii) He also discovered the pathway of blood in major arteries and veins.

79. Describe the structure of an artery.

Ans: Structure of Artery:

(i) The walls of an artery are composed of three layers.
(ii) The outermost layer is made of connective tissue.
(iii) The middle one is made up of smooth muscles and elastic tissue.
(iv) The innermost layer is made up of endothelial cells.
(v) The internal cavity in which blood flows is called lumen.

9.3 Cardiovascular Disorder

80. What is vascular surgery?
OR What do you mean by Vascular Surgery?

Ans. Vascular surgery is a field in surgery in which diseases of arteries and veins (like thrombus) are managed by surgical methods. A vascular surgeon treats the diseases of all parts of blood circulatory system except that of heart and brain.

9.3.1 Atherosclerosis and Arteriosclerosis

81. What is meant by Arteriosclerosis?
OR Write the names of two diseases of human blood.

Ans. Arteriosclerosis is a general term describing any hardening of arteries. It occurs when calcium is deposited in the walls of arteries. It can happen when atherosclerosis is severe.

82. Write the names of four agents which cause cardio mascular diseases.
OR Name the factors that lead to cardiovascular disorders.
OR Write down two main reasons of cardio vascular diseases.

Ans. The risk factors that lead to cardiovascular disorders include advanced age, diabetes, high blood of low density lipids (e.g. cholesterol) and triglycerides, tobacco smoking, high blood pressure (hypertension) obesity and sedentary lifestyle.

83. What do you know about Thrombus and Embulus?
OR Differentiate between thrombus and embolus.

Ans. **Thrombus:** Accumulation of cholestrol is the prime contribution to atherosclerosis. It results in the formation of multiple deposits called

plaques within arteries. Plaques can form blood clots called thrombus with arteries.

Embolus: If a thrombus dislodges and becomes free floating it is called an embolus.

84. Differentiate between atherosclerosis and arteriosclerosis.

Ans. Both atherosclerosis and arteriosclerosis are the diseases of arteries and also lead to heart diseases but there following difference between them.

Altherosclerosis

Atherosclerosis is commonly called as Narrowing of arteries. It is a chronic disease in which fatty material, cholesterol or Fibrin deposit on arteries. When this condition become severe, it becomes difficult to open and contract arteries further to flow the blood. Deposition of cholesterol is the major cause of Atherosclerosis.

Arteriosclerosis

1) Arteriosclerosis is a general term describing any hardening of arteries.
2) It occurs when calcium is deposited in the walls of arteries. It can happen when atherosclerosis become severe.

9.3.2	Myocardial Infarcion

85. What is Angina Pectoris?

OR . What is meant by Angia Pectoris?

Ans. Angina pectoris means "Chest pain". In this disease blood supply to heart museles is not sufficient but shortage is not enough to cause tissue death. It is not as severe as heart attack. The pain may occur in heart and often in left arm and shoulder.

86. What is Angioplasty and bypass surgery.

OR What is the difference between engioplasty and bypass surgery?

Ans. Angioplasty and bypass surgery is the mechanical widening of a narrowed or totally obstructed blood vessel. It is a heart surgery in which arteries or veins from elsewhere in the patient's body are grafted to the coronary arteries to improve the blood supply to heart muscles.

87. What is bypass surgery? Write its benefit.

Ans. Most cases of myocardial infarction are treated with Angioplasty or bypass surgery. In this surgery, arteries or veins from elsewhere in the patient's body are grafted to the coronary arteries to improve blood supply to heart muscles. The patient can be safe from a serious damage of heart, by this treatment.

88. Write the symptoms of Myocardial Infarction.

Ans. Main symptom of myocardial infarction is severe chest pain. This pain creates feeling of congestion, stress and squeezing in the chest. Pain mostly moves towards left arm, but it can also move towards lower jaw, neck, right arm and back. Myocardial Infarction may cause unconsciousness and eventually sudden death of the victim.

Long Question (Unsloved)

9.1

1. How transport of food takes in plants?
2. How uptake of water and ions take place in plants?
3. How would you relate the internal structure of root with the uptake of water and Ions?

9.1.2

4. Explain the significance of transpiration.
5. Explain the factors affecting the rate of transpiration.

OR Define transpiration. Also describe the factors affecting the rate of

transpiration.

OR Define transpiration, explain the factors affecting the rate of transpiration.

OR Define transpiration and relate it with cell surface and with stomatal opening and closing.

OR Write factors affecting the rate of transpiration.

6. Explain the guard cell control the opening and clossing of stomata.

OR Explain the openning and clossing of stomata.

9.1.3

7. How transport of water takes place in plants?

9.1.4

8. Write a note on transport of food in plants.

9.2 **9.2.1**

9. Write short note on

i) Blood cancer ii) Thalasaemia

OR Write a note on Laeokemia and Thalasaemia.

OR Write a note on blood cancer and Thalasaemia.

OR Write down the detail of disorders of blood.

OR State the causes and symptoms of Leukemia and Thallassemia.

10. Briefly explain about blood plasma.

11. Write a note on Blood Group System.

12. Explain ABO Blood Group System.

OR Write a note on ABO blood group system.

13. Where red blood cells are formed in human? Describe their structure and fucntion.

14. Write a note on Venous System.

15. What do you mean by blood groups? How do we classify blood groups in terms of ABO and Rh blood group systems?

16. Write Arterial system's plan of human blood circulatory system.

17. Explain leukocytes.

9.2.2

18. Explain the human heart with diagram.

19. Human heart acts like a double pump. Explain it.

20. Write a note on Heart Beat.

9.2.3

21. What four chambers make the human heart and how blood flows through these chambers.

22. Explain Pulmonary and Systematic Circulations.

23. How many types of blood vessels are there?

OR Write a note on arteries.

OR Differentiate between strucutre and function of arteries and veins.

24. Define white blood cells also describe its types in detail.

9.3

25. Discuss cardiovascular disorders.

9.3.2

26. Write a note of myocardial intrection.